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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MENON, KRISHNAN S

ART UNIT PAPER NUMBER

1723

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/734,050	Applicant(s) GORDON, ANDREW W.	
	Examiner Krishnan S. Menon	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 and 30-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 27 and 36 is/are allowed.
- 6) ☒ Claim(s) 15-25, 30-35 and 37-41 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 15-28 and 30-41 are pending as of 8/29/06, pre-appeal conference request.

Prosecution of the application is being continued as decided in the pre-appeal conference (mailed 9/28/06) to make some corrections in the rejections discussed in the prior non-final office action and also to add some new grounds for rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

A. Claims 15-26 and 28-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The negative limitation, "not at the first depth" does not seem to have support in the original disclosure. See MPEP 2173.05(i) about negative limitations.

Applicant's arguments (7/27/06) does not provide support for this limitation. Figure 6B and paragraph 131, while showing support that "not at first depth" as being at a lower depth in the ocean than the location of the intake with reference to the ship, does not provide adequate disclosure for the infinite possibilities for the locations which

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are "not at first depth". *For example, there is no support for the possibility that the concentrate discharge is in the air, sprayed from the ship in to the air 10 ft above the ocean surface.* Since applicant's invention is about how the concentrate is being discharged, such broad limitations in claims added during prosecution would bring in new matter.

B. Claims 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims recite instrumentation and sensors for detecting depth of thermocline and plankton in the ocean. However the specification as originally filed does not provide any details of the instruments and sensors for one of ordinary skill in the art to determine the depth of thermocline and plankton under the sea.

Applicant's arguments in this regard (7/27/06) are not persuasive. The instruments for measuring depth of thermocline or planktons are not well known in the art (of desalination or membrane separation). The reference applicant cited (US 5,834,641) does not detect plankton. It is a temperature and pressure sensor that can be attached to a fishing line (non-analogous art), and does not provide any details as to how this could be effectively used on a ship on a water intake or discharge pipe. Applicant had neither incorporated (or quoted) this reference in the specification as originally filed, nor provided this reference in an IDS with the filing of this application, which makes one wonder whether applicant knew about this reference at the time of

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filing this application. Therefore, this reference also would not suffice as evidence that applicant knew about the instruments for measuring depth of thermocline at the time of invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 15 and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by, or under 35 USC 103(a) as being obvious over, Krylov (US 6,658,889).

Krylov teaches a system and a process of desalinating seawater aboard a ship by reverse osmosis having a water intake (7) positioned in the body of the seawater, a mixing space (2) for mixing seawater with RO concentrate (makes ice slush with sea water and concentrate mixture), and a discharge of the mixture (inherently, the ice slush would be discharged at some point), which is inherently not at the first depth, but at a different point. The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent

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teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

Please note that the new amendment of claim 15 (7/27/06) has made it broader than before.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 28, 31 and 32 are rejected under 35 USC 103(a) as being unpatentable over Bosley (US 6348148).

Bosley teaches a continuous process for making desalinated water by reverse osmosis (abstract, figures) from seawater. The system is offshore, on a ship (column 4 line 65 teaches the system suspended from a ship, which would be 'on a ship' (during examination, the claims must be interpreted as broadly as their terms reasonably allow.

> In re American Academy of Science Tech Center, ___ F.3d ___, 2004 WL 1067528 (Fed. Cir. May 13, 2004)(The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their

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broadest reasonable interpretation)); comprises a vessel (50) for producing a permeate (column 5 lines 4-67), concentrate discharge below the thermocline (lines 35 and 58), intake (column 5 lines 25-33), the intake of sea water and the discharge of concentrate at different levels, permeate delivery means comprises pipeline, transfer pumps, second vessel, etc: see column 5 lines 36-48.

Depth of intake to avoid planktons: Bosley has the system operating at a depth, not at the surface, which would inherently avoid planktons.

Bosley teaches mixing concentrate with seawater at the point of discharge for dilution – column 4 lines 1-20, which is an obvious equivalent of applicant's claim of diluting the concentrate and then discharging into a body of seawater.

3. Claims 15-23, 28-35 and 37-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lampe, et al, "PCS-Preussag Conversion Systems", Elsevier, 1997, in view of Permar (US 6,299,766) and/or Bosley'148.

Lampe teaches a system and a process of desalination using reverse osmosis as claimed, wherein the system is installed on board a ship. However, Lampe does not teach the specifics of water intake and concentrate discharge.

Permar teaches a desalination system for sea water having reverse osmosis membranes, in which the concentrate is diluted by mixing with seawater before discharge in a plenum (44): see abstract, column 1 lines 50-64, column 3 lines 23-40 and figure 1. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Permar in the teaching of Lampe because Permar

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teaches a system which provides highly effective filtering with expenditure of considerably less energy and improved recovery from subsequent downstream filters in a series of filters, unlike the prior arts.

Bosley teaches a process of desalination and system either suspended from a ship or moored to the sea floor, including water intake, concentrate discharge and the requirement of mixing seawater with the concentrate properly at discharge to avoid pollution of the environment of discharge as discussed in paragraph 1 above. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Bosley in the teaching of Lampe for the proper operation of the system as taught by Bosley. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Bosley and Permar in the teaching of Lampe because Bosley teaches protecting the environment by diluting the concentrate water at discharge; and Permar teaches diluting the concentrate in the system for improved performance, with concentrate discharged after dilution.

Some of the instant claims differ from the teaching of Lampe in view of Bosley in the recitation of the location of the water intake and concentrate discharge, the intake at below the thermocline region and discharge above, the concentrate discharge having a plurality of ports, and a mixing space aboard the ship. Bosley teaches in column 4 lines 1-20 that the discharge of the concentrate should be safe to the environment, and teaches discharging the concentrate where mixing of the seawater with ocean current would be very efficient. Bosley also teaches discharge of concentrate at a distance from the intake – see 38 and 40, figure 4, discharge at 14, figure 3, and figure 6 which

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has a different intake and discharge. These teaching would be equivalent to the applicant's claimed mixing, discharge of the concentrate water using multiple ports or at a distance from the intake. An express suggestion to substitute one equivalent component or process for another is not necessary to render such substitution obvious. In re Fout, 675 F.2d 297, 213 USPQ 532 (CCPA 1982).

Regarding the limitation of the sea going vessel having a draught of 10 meters – this pertains only to the size of the ship, which is not patentable. In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Regarding “sea chest”: this is only a water compartment in the ship's hull, which is inherently present in all ships, such as the ballast tank.

Regarding the temperature and/or concentration of the concentrate being substantially equal to that of seawater at the point of discharge, Bosley recognizes this feature in the teaching that the concentrate is discharged at a location which has sufficient ocean currents to eliminate any adverse effect of such discharge.

Allowable Subject Matter

Claims 27 and 36 are allowed.

Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the closest references are Lampe/Bosley/Permar in view of Husik. However, the teaching of Husik is for disposal of concentrates/wastes using an aspirator in which the fluid powering the aspirator is not the concentrate, but the dilution water, whereas the applicant's claims recite the concentrate flow causes the seawater to be drawn in.

Response to Arguments

Applicant's arguments filed 7/27/06 have been fully considered but they are not persuasive. Many of the arguments are addressed in the rejection.

Applicant's arguments are centered on mixing the concentrate with seawater before discharge. However, this would be obvious to one of ordinary skill in the art as shown in the rejections, and is not a patentable invention.

With respect to the Krylov reference, discharging the concentrate to the ocean would not constitute a patentable limitation over the reference. Discharging the concentrate is an inherent or implied teaching in the reference, as shown.

With respect to the rejection of the claims over Lampe in view of Bosley, the "space for mixing" is not a patentable invention. It does not provide any particular structure to differentiate the claimed invention from the teaching of the reference. Applicant's mixing of concentrate with seawater before discharge, the point of discharge

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and the relative dimensions, etc., would not constitute patentable inventions over the references because the references in combination already identifies the problem addressed by the invention and teaches a solution to the problem which is an obvious equivalent of the claimed limitation. Attorney's arguments in this matter is not sufficient to overcome the rejection. Applicant must provide secondary evidence to prove that applicant's invention is patentable over the combined teaching of the references.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Krishnan S Menon
Primary Examiner
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